REMARKS

Claims 1-8 are pending in this application. By this Amendment, claims 1-3, 7 and 8 are amended to overcome the cited references, and claim 9 is cancelled. No new matter is added by this Amendment. Support for the language added to the claims can be found throughout the specification, for example, at paragraphs 50, 67, 125, 112-114 and in Fig. 1.

The courtesies extended to Applicants' representative by Examiner Angebranndt at the interview held November 2, 2005, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below and constitute Applicants' record of the interview.

I. Rejections Under 35 U.S.C. §102

A. JP '288

Claims 1, 3-6 and 9 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by JP 02-147288 ("JP '288"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Claims 1 and 3 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm.

Applicants submit that JP '288 nowhere teaches or suggests an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 1 and 3-6. During the November 2, 2005 interview, Examiner Angebranndt agreed that JP '288 does not appear to teach or suggest that the recording layer has a thickness of 15 nm or less.

For the foregoing reasons, Applicants submit that JP '288 does not teach or suggest all of the features recited in claims 1 and 3-6. Reconsideration and withdrawal of the rejection are thus respectfully requested.

B. JP '088

Claims 1, 3-7 and 9 were rejected under 35 U.S.C §102(b) as allegedly being fully anticipated by JP 02-043088 ("JP '088"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Claims 1, 3 and 7 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm.

Applicants submit that JP '088 nowhere teaches or suggests an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 1 and 3-7. During the November 2, 2005 interview, Examiner Angebranndt agreed that JP '088 does not appear to teach or suggest that the recording layer has a thickness of 15 nm or less.

For the foregoing reasons, Applicants submit that JP '088 does not teach or suggest all of the features recited in claims 1 and 3-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

C. JP '741

Claims 3-6 and 9 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by JP 62-209741 ("JP '741"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Claims 3 and 6 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm.

Applicants submit that JP '741 nowhere teaches or suggests an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 3-6. Instead, JP '741 merely teaches that the thickness of the record film is taken as the value, which can take the large difference of matching with the optical property of the protective layers. See page 4, lines 29-30 of machine-translation of

JP '741. This clearly does not teach or suggest the specific recording layer thickness being 15 nm or less as required in claims 3-6.

During the November 2, 2005 interview, Examiner Angebranndt agreed that JP '741 does not appear to teach or suggest that the recording layer has a thickness of 15 nm or less.

For the foregoing reasons, Applicants submit that JP '741 does not teach or suggest all of the features recited in claims 3-6. Reconsideration and withdrawal of the rejection are thus respectfully requested.

D. Nakanishi

Claims 1, 3-7 and 9 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5, 124,232 ("Nakanishi"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Claims 1, 3 and 7 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm. As admitted by the Patent Office, Nakanishi does not explicitly teach that the recording layer has a thickness of 15 nm or less as now required in claims 1, 3 and 7.

Applicants submit that Nakanishi does not teach or suggest an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 1 and 3-7.

For the foregoing reasons, Applicants submit that Nakanishi does not teach or suggest all of the features recited in claims 1 and 3-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

E. Maeda

Claims 3-6 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,187,052 ("Maeda"). This rejection is respectfully traversed.

As an initial matter, claims 1and 3 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm.

Applicants submit that Maeda does not teach or suggest an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 1 and 3. Instead, Maeda teaches that the recording layer has a thickness preferably between 50 nm and 200 nm. See column 4, lines 42-44 of Maeda. During the November 2, 2005 interview, Examiner Angebranndt agreed that Maeda does not appear to teach or suggest that the recording layer has a thickness of 15 nm or less.

For the foregoing reasons, Applicants submit that Maeda does not teach or suggest all of the features recited in claims 3-6. Reconsideration and withdrawal of the rejection are thus respectfully requested.

F. Kojima

Claims 1-7 and 9 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,761,950 ("Kojima"). This rejection is respectfully traversed.

The Patent Office alleges that Kojima teaches an 11 nm thick recording layer having a composition of Te 51%, Ge 45 % and Bi 4% formed by sputtering on a grooved polycarbonate substrate, thus allegedly teaching the subject matter recited in claims 1-7 and 9. Applicants respectfully disagree.

Kojima teaches a recording layer is made of $Ge_{45}Bi_4Te_{51}$ which a thickness of 11 nm. The material $Ge_{45}Bi_4Te_{51}$ taught be Kojima is $(GeTe)_{90}Bi_2Te_3)_{10}$ (the composition existing on the line for connecting GeTe ($Ge_{50}Te_{50}$) and Bi_2Te_3). In other words, the recording layer made of $Ge_{45}Bi_4Te_{51}$ taught by Kojima has the B-series composition disclosed in the present specification. However, the recording layer recited in claims 1, 2, 3 and 7 does not contain the B-series composition.

For the foregoing reasons, Applicants submit that Kojima does not teach or suggest all of the features recited in claims 1-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

II. Rejections Under 35 U.S.C. §103

A. JP '935

Claims 1, 3-7 and 9 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over JP 63-225935 ("JP '935"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Claims 1, 3 and 7 have been amended to incorporate the feature that the recording layer has a thickness of not more than 15 nm.

Applicants submit that JP '935 nowhere teaches or suggests an information recording medium containing a rewritable recording layer, wherein the recording layer has a thickness of 15 nm or less, as required in claims 1 and 3-7. Instead, JP '935 teaches that the record layer of Example 1 has a thickness of about 100 nm. See page 4, lines 8-9 of the machine translated JP '935. This is clearly a recording layer having a thickness far greater than the 15 nm or less required in claims 1 and 3-7.

During the November 2, 2005 interview, Examiner Angebranndt agreed that JP '935 does not appear to teach or suggest that the recording layer has a thickness of 15 nm or less.

For the foregoing reasons, Applicants submit that JP '935 does not teach or suggest all of the features recited in claims 1 and 3-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

B. Nakanishi

Claims 1-7 and 9 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakanishi. This rejection is respectfully traversed.

The Patent Office alleges that it would have been obvious to one of ordinary skill in the art to modify Example 6a taught by Nakanishi by using other thicknesses disclosed as useful, including 10-15 nm. Applicants respectfully disagree with this allegation.

During the November 2, 2005 interview, Applicants' representative and Examiner Angebranndt discussed that the recording layer of 10 to 70 nm as taught by Nakanishi is a preferred range when the optical interference between two surfaces of the recording layer is utilized. Nakanishi does not teach or suggest that the recording layer is rewritable, or that the number of times that the recording layer may be rewritten is improved when the thickness of the recording is not more than 15 nm. Furthermore, it would not have been obvious for one of ordinary skill in the art to select a layer having a thickness of not more than 15 nm, as recited in claims 1-8, from Nakanishi in order to improve the rewriting performance.

As requested by Examiner Angebranndt during the November 2, 2005 interview, Applicants have conducted a further experiment to demonstrate the superiority of a recording layer having a thickness of 15 nm or less as recited in claims 1-8 versus a recording layer having a thickness greater than 15 nm.

Applicants conducted a comparative test of a recording medium (hereinafter referred to as "test medium") in which a recording layer had a thickness of 16 nm, which is outside of claimed range of "not more than 15 nm." The test medium was prepared as follows:

1. The composition of the recording layer for the test medium was $Bi_{6.5}Ge_{42}Te_{51.5}$, which is the same as that of F4.

2. The film structure of the test medium is the same as that of the embodiment for the F-series, except for the thickness of the recording layer.

The specific film structure and thickness of the test medium is as follows (also see Fig. 1):

Substrate of 0.6 mm

$(ZnS)_{80}(SiO_2)_{20}$ of 135 nm (first protective layer)

Cr_2O_3 of 7 nm (first thermostable layer)

$Bi_{6.5}Ge_{42}Te_{51.5}$ of 16 nm (recording layer)

Cr_2O_3 of 5 nm (second thermostable layer)

$(ZnS)_{80}(SiO_2)_{20}$ of 33 nm (second protective layer)

$Cr_{90}(Cr_2O_3)_{10}$ of 40 nm (absorptance control layer)

Al of 150 nm (heat-diffusing layer)

3. Applicants evaluated the test medium for the criteria of the jitter and the rewriting life, in the same manner as performed for the medium prepared in the embodiment. The evaluation result for the test medium was that jitter was "OK," but the rewriting life was "NG."

4. Applicants did not conduct other tests in which a recording layer has a thickness of more than 16 nm. However, from the above test evaluation, it can be anticipated that recording layer with a thickness of more than 16 nm would also be evaluated as "NG" for the rewriting life criterion.

The present disclosure clearly explains that "it is optically optimum that the film thickness of the recording layer is not less than 5 nm and not more than 15 nm in the medium structure of the present invention. In particular, when the film thickness is not less than 7 nm and not more than 11 nm, the deterioration of the reproduced signal, which would be otherwise caused by the flowing of the recording film during the multiple time rewriting, is suppressed, and the modulation degree can be made optically optimum, which is convenient." See paragraph 126 of the specification.

Accordingly, when the recording layer becomes thicker, the deterioration of the reproduced signal during the multiple rewriting due to the flowing of the recording film also

becomes greater. Therefore, in the present application, the upper limit of the thickness of the recording layer is 15 nm.

As such, Applicants submit that the claimed thickness of recording layer is critical and produces unexpected results in the information recording medium, and is not taught or suggested by Nakanishi.

For the foregoing reasons, Applicants submit that Nakanishi does not teach or suggest all of the features recited in claims 1-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

C. Kojima or Nakanishi in view of Kondo

Claims 1-9 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over either Kojima or Nakanishi, in view of U.S. Publication No. 2002/0172139 ("Kondo"). This rejection is respectfully traversed.

As an initial matter, Applicants point out that claim 9 has been cancelled. Kondo is directed to an information recording medium composed of a substrate, a recording layer and a light transmitting layer. See the Abstract of Kondo.

Kondo does not remedy the deficiencies of Kojima and/or Nakanishi. In particular, Kondo nowhere teaches or suggests that the recording layer in the information recording medium has a thickness of 15 nm or less, as recited in claims 1-8. Furthermore, Kondo does not teach or suggest a recording layer containing Bi, Ge, and Te, and composition ratios thereof that are within a range surrounded by respective points on a triangular composition diagram having apexes corresponding to Bi, Ge, and Te, as required in claims 1-3 and 7.

For the foregoing reasons, Applicants submit that Kojima, Nakanishi and/or Kondo do not teach or suggest all of the features recited in claims 1-8. Reconsideration and withdrawal of the rejection are thus respectfully requested.

III. Provisional Obviousness-Type Double Patenting

Claims 1-9 were provisionally rejected under the judicially created doctrine of double patenting over claims 1-15 of co-pending Application No. 10/929,425. The Patent Office alleges that the subjected matter claimed in the instant application is allegedly fully disclosed in the co-pending application.

In order to obviate this rejection, filed herewith is a Terminal Disclaimer. Applicants submit that this rejection is now moot. Reconsideration and withdrawal of the rejection are thus respectfully requested.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-8 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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